IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (currently amended) In a graphics system, a computer-implemented method of rendering a graphic primitive, the graphic primitive having a plurality of sides that define the edge of the primitive, the method comprising:

receiving a signal from an interface, the signal comprising data about a plurality of vertices of the primitive and a variable at a point being processed;

~~determining a channel value for each of the plurality of vertices of the primitive using the data about the plurality of vertices and the variable at the point being processed;~~

~~randomly~~ selecting an interior point within the graphic primitive;

selecting at least two side points located on a side of the graphic primitive;

~~determining an interpolated channel value with an interpolation engine for each of the at least two side points;~~

determining a first ratio according to a first channel value for the at least two side points and determining one or more remaining channel values for each of the at least two side points based on the first ratio;

determining a second ratio according to a first channel value for the interior point and determining one or more remaining channel values for the interior point according to the second ratio and the corresponding channel values of the side points; and

storing one or more of the additional channel values for the interior point.~~; and~~

~~determining a channel value at the randomly selected interior point by interpolation from the interpolated channel values of each of the at least two side points~~.

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2. (currently amended) The method of claim 1, wherein determining ~~the interpolated~~ <u>one or more remaining</u> channel value<u>s</u> for each of the at least two side points further comprises performing linear interpolation using an interpolation engine to determine the interpolated channel values of the two <u>side</u> points.

3. (currently amended) The method of claim 1, wherein determining ~~the interpolated~~ <u>one or more remaining</u> channel value<u>s</u> for each of the at least two side points further comprises performing perspective interpolation using an interpolation engine to determine the interpolated channel values of the two <u>side</u> points.

4. (previously presented) The method of claim 1, further comprising repeating each of the aforementioned steps for a plurality of points in the graphic primitive.

5. (original) The method of claim 1, wherein the channel value represents color.

6. (original) The method of claim 1, wherein the channel value represents luminance.

7. (original) The method of claim 1, wherein the channel value represents a texture coordinate.

8. (currently amended) An electronically-readable medium storing a program for permitting a computer to perform a method comprising:

receiving a signal from an interface, the signal comprising data about a plurality of vertices of the primitive ~~and a variable at a point being processed~~;

~~determining a channel value for each of the plurality of vertices of the primitive using the data about the plurality of vertices and the variable at the point being processed;~~

~~randomly~~ selecting an interior point within the graphic primitive;

determining a first ratio according to a first channel value for at least two side points, each side point associated with an edge of the primitive;

calculating one or more remaining channel values for each of the at least two side points based on the first ratio;

determining a second ratio according to a first channel value for the interior point; and

calculating one or more remaining channel values for the interior point according to the second ratio and the corresponding channel values of the at least two side points.

~~determining an interpolated channel value with an interpolation engine for each of at least two side points; and~~

~~determining a channel value at the randomly selected interior point by interpolation from the interpolated channel values of each of the at least two side points.~~

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9. (currently amended) A method of rendering a graphic primitive, the primitive including a plurality of edges, the method comprising:

receiving a signal from an interface, the signal comprising data about the plurality of vertices of the primitive and a variable at a point being processed;

~~deriving a channel value of a first point on a first edge of the graphic primitive using data about the plurality of vertices of the primitive and an variable at the point being processed;~~

~~deriving a channel value of a second point on a second edge of the graphic primitive using data about the plurality of vertices of the primitive and an independent variable; and~~

~~based upon the channel values of the first point and the second point, determining a channel value for a randomly selected interior point located within an interior surrounded by the edges of the graphic primitive~~

determining a first ratio for a first point on a first edge of the graphic primitive, the first ratio determined for a first channel value using the primitive vertices data;

deriving one or more additional channel values for the first point based on the first ratio;

determining a second ratio for a second point on a second edge of the graphic primitive, the second ratio determined for a second channel value using the primitive vertices data;

deriving one or more additional channel values for the second point based on the second ratio;

determining a third ratio for an interior point based on the channel values for the first point and the channel values for the second point;

determining one or more additional channel values for the interior point based on the third ratio; and

storing one or more of the additional channel values for the interior point.

10. (currently amended) The method of claim 9 wherein the step of determining the first ratio for ~~channel value of~~ the first point comprises determining the channel values of end points of the first edge ~~to determine the channel value of the first point~~.

11. (currently amended) The method of claim 9 wherein the step of determining the second ratio for ~~channel value of~~ the second point comprises determining the channel values of end points of the second edge ~~to determine the channel value of the second point~~.

12. (currently amended) The method of claim 9 ~~further comprising~~ wherein determining one or more additional channel values includes using depth values of the first point and second point to determine a channel value for the interior point.

13. (currently amended) An electronically-readable medium storing a program for permitting a computer to perform a method comprising:

receiving a signal from an interface, the signal comprising data about a plurality of vertices of a primitive and a variable at a point being processed;

~~deriving a channel value of a first point on a first edge of the graphic primitive using data about the plurality of vertices of the primitive and an variable at the point being processed;~~

~~deriving a channel value of a second point on a second edge of the graphic primitive using data about the plurality of vertices of the primitive and a variable at a point being processed; and~~

~~based upon the channel values of the first point and the second point, determining a channel value for a randomly selected interior point located within an interior surrounded by the edges of the graphic primitive.~~

determining a first ratio for a first point on a first edge of the graphic primitive, the first ratio derived from the primitive vertices data and a variable at the point being processed;

deriving a channel value for the first point based on the first ratio;

determining a second ratio for a second point on a second edge of the graphic primitive, the second ratio derived from the primitive vertices data and a variable at the point being processed;

deriving a channel value for the second point based on the second ratio;

determining a third ratio for an interior point according to the first channel value and the second channel value, the interior point contained within the interior surrounded by the edges of the graphic primitive; and

deriving a channel value for the interior point based on the third ratio.

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14. (currently amended) A system for rendering a graphic primitive, the graphic primitive including a plurality of vertices and edges, the system comprising:

a plurality of agents configured to receive information from an interface related to the plurality of vertices, a ~~randomly selected~~ point within the graphic primitive, and generate output signals;

an arbiter coupled to the plurality of agents and configured to receive the output signals and to generate request signals;

an interpolation engine configured to receive the request signals and generate an output ratio signal dependent on at least some of the output signals from the plurality of agents; and

a router coupled to the interpolation engine and configured to transmit the output ratio signal to an input of at least one of the plurality of agents.

15. (currently amended) A system for rendering a graphic primitive in a graphics system, the graphic primitive having a plurality of sides, the system comprising:

a channel value input device configured to determine a channel value for each of a plurality of vertices of the graphic primitive using data received from an interface;

a point specifier, coupled to the channel value input device, configured to ~~randomly~~ select an interior point within the graphic primitive; and

an interpolation engine coupled to the point specifier and to the channel value input device, configured to determine a first ratio according to a first channel value for each of at least two side points using data received from the interface, determine an interpolated channel value for each of the at least two side points using the first ratio and data received from the interface, determine a second ratio according to a first channel value for the interior point and further configured to determine a channel value at the ~~randomly~~ selected interior point using the second ratio and ~~by~~ interpolation of the channel values for each of the at least two side points ~~from the interpolated values~~.

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16. (original) The method of claim 9 wherein the channel value of the interior point is further dependent upon a distance E between the interior point and the first point, and dependent upon a distance F between the interior point and the second point.

17. (original) The method of claim 10 wherein the channel value of the first point is further dependent upon a distance A between the first point and the first end point of the first edge, and dependent upon a distance B between the first point and the second end point of the first edge.

18. (original) The method of claim 11 wherein the channel value of the second point is further dependent upon a distance C between the second point and the first end point of the second edge, and dependent upon a distance D between the second point and the second end point of the second edge.

19-22. (cancelled)

23. (currently amended) A method of generating interpolated values for use in rendering a graphic primitive, the method comprising:

receiving from an interface an independent variable X representing the physical portion of a ~~randomly selected~~ point within the graphic primitive;

receiving vertex values X_0, X_1 of a primitive edge having the ~~randomly selected~~ point within the graphic primitive with the physical position represented by the independent variable X;

receiving depth values Z_0, Z_1 associated with the vertex values X_0, X_1;

calculating a ratio value dependent upon the independent variable at the point X, vertex values X_0, X_1, and depth values Z_0, Z_1; and

storing the ratio value.

24. (original) The method of claim 23 further comprising:

receiving color values associated with the vertex values X_0, X_1; and

calculating interpolated color values for the point based upon the ratio value and the color values associated with the vertex values of X_0, X_1.

25. (original) The method of claim 23 further comprising:

receiving texture values associated with the vertex values X_0, X_1; and

calculating interpolated texture values for the point based upon the ratio value and the texture values associated with the vertex values X_0, X_1.

26. (original) The method of claim 23 further comprising calculating a screen-based Z coordinate for the point based upon the independent variable X, vertex values X_0, X_1, and depth values Z_0, Z_1.

27. (currently amended) An electronically-readable medium storing a program for permitting a computer to perform a method of generating interpolated values for use in rendering a graphic primitive, the method comprising:

receiving from an interface an independent variable X representing the physical portion of a ~~randomly selected~~ point within the graphic primitive;

receiving from the interface vertex values X_0, X_1 of a primitive edge having the ~~randomly selected~~ point within the graphic primitive with the physical position represented by the independent variable X;

receiving from the interface depth values Z_0, Z_1 associated the vertex values of X_0, X_1; and

calculating a ratio value dependent upon the independent variable X, vertex values X_0, X_1, and depth values Z_0, Z_1.

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28. (currently amended) The method of claim 1, wherein determining a one or more remaining channel values for the interior point further comprises performing linear interpolation using an interpolation engine to determine the channel value of the selected interior point within the graphic primitive.

29. (currently amended) The method of claim 1, wherein determining the one or more remaining channel values for the interior point further comprises performing perspective interpolation using an interpolation engine to determine the channel value of the selected interior point.